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The Art of Structured Finance

The Linear Press • Chestnut Ridge, New York

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Published by The Linear Press, 500 Chestnut Ridge Road
Chestnut Ridge, New York 10977

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Printed in the United States of America
First printing, August 1995

Preface

This book attempts to fill a void left by the existing body of literature related to the field of finance. It is designed for people who are interested in using the tools of finance in more elegant and productive ways. I have therefore minimized the amount of material related to the definitions and conventions of finance, all of which is available in previously published texts, in favor of a direct focus on the new material being presented.

Wherever possible, I tried to provide enough background material so that the book can stand alone for readers of all experience levels. Part One is dedicated to satisfying this objective. As with all works of this type, however, some readers will find certain sections easier or more useful than others. For the experienced finance professional, for instance, Part Two may be of more interest. For the newcomer, I recommend that you augment the material in this book with more definitional texts such as the following.

“Money and the Capital Markets: The Financial System in the Economy”
Peter S. Rose, Business Publications, Inc.
Plano, Texas (especially chapters 6-10,19-20 & 25)

“Fundamentals of Money, Banking and Financial Institutions”
Jonas Prager, Harper & Row Publishers
New York, New York (especially chapter 3)

“The Fundamentals of Municipal Bonds”
Public Securities Association
New York, New York

“Standard Securities Calculation Methods”
John J. Lynch Jr. and Jan H. Mayle
Securities Industry Association
New York, New York

For the municipal finance reader, the Mathematical Calculations Appendix contained in “The Fundamentals of Municipal Bonds” is a particularly good complement to some of the material presented in “The Art of Structured Finance”, as is the Glossary of Municipal Terminology. “The Art of Structured Finance” also contains references to other works of interest that I strongly recommend. Among these works are “The Visual Display of Quantitative Information” and “Envisioning Information” both authored by Edward Tufte and published by Graphics Press, Cheshire Connecticut. I also strongly encourage the reader to review any of the Frank Lloyd Wright works referenced throughout the book.

I thank the reader for taking an interest in the following work and hope that it brings value to your study of finance and its place in our lives.

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Introduction

The purpose of this book is to integrate the science of fixed income mathematics with the art of transaction design. The result of this integration is what I call the art of structured finance. This is, I believe, a new field of study. At a minimum, it is a unique way of looking at an existing field of study. As a theoretical work, the book's main objective is to establish new criteria for evaluating the performance of financial transactions. As a practical work, the book's main objective is to demonstrate how a fundamental understanding of fixed income mathematics can be used to craft innovative financing structures.

A transaction designed to meet a specific financing objective or set of financing objectives must have a structure just as a building designed to house a family must have a structure. When designing the structure of a house, an architect uses the tools at his disposal to satisfy a set of physical requirements. In similar fashion, the architect designing the structure of a transaction will use the tools at his disposal to satisfy a set of financial requirements.

For the architect of physical structures, the primary construction tools are steel, glass, plastic and wood. For the architect of financial structures, the primary construction tools are fixed rate bonds, variable rate bonds, premium bonds and discount bonds. If an architect is unskilled or unenlightened, he will use these tools to create uninspired structures that poorly serve the people that rely on them. A skilled and enlightened architect will use the same tools to create elegant structures that serve both the needs and the spirit of the people.

Part One of this book introduces the fundamentals of structured finance. It begins by setting forth the cash flow mechanics of the debt instruments that are the tools of transaction design. It then demonstrates how these tools can be applied to achieve specific debt service forms. Standard techniques of transaction evaluation are introduced in order to provide a contextual analysis of design performance. Part One concludes with an overview of transaction presentation principles.

Part Two introduces an "organic" approach to structured finance. This approach is based on the writings and design philosophy of America's greatest architect, Frank Lloyd Wright. By organic architecture, Mr. Wright meant "an architecture that develops from within outward in harmony with the conditions of its being as distinguished from one that is applied from without."⁶ This is a simple yet very profound approach to architecture. What I have endeavored to do is apply the principles of organic architecture in a way that establishes a new set of criteria for evaluating the performance of financing structures.

During his prolific lifetime, Mr. Wright developed a set of design principles that I believe has tremendous value for anyone designing financial as well as physical structures. Throughout this book, I have shared with the reader specific examples of Mr. Wright's work as a means to reinforce the structured finance concepts that were inspired by his teachings. Part Two is my attempt to create a structured

finance landscape that adheres to Mr. Wright's architectural vision.

As my particular area of expertise is in the field of public finance, much of the material presented relates to financing structures developed for entities such as states, state authorities, local governments and housing agencies. Having also studied the field of corporate finance, I believe that public finance demands far more creativity from its professionals. I also believe that the landscape within which public finance transactions are crafted is far more complex and interesting than what is typically found in corporate finance.

In structured finance, as in every field of human endeavor, there is opportunity to temper hard science with human spirit. In this way, we control the fruits of our imagination instead of being enslaved by them. In the design and presentation of financial structures, there is surprisingly ample opportunity for the creative element of the human spirit to be served. I hope this book demonstrates that by serving this spirit, we can improve ourselves as well as the structures we create.

* Frank Lloyd Wright, "In the Cause of Architecture-Second Paper." *The Architectural Record*, May 1914, p. 122